



John H. Northrop & Associates, Inc.

Technical Consulting Services

“Your Warfighter to Engineer Interface”

Professional Engineering Services (PES)

General Services Administration

Federal Acquisition Service

Authorized GSA Schedule Price List

Contract Number: **GS-10F-0168T**

Contract Period: 27 February 2012 – 26 February 2017

DUNS No.: 030084573

Cage Code: 1ULT5

Primary Engineering Disciplines: Mechanical (for all four SINs below)

Special Item Numbers Awarded:

- **871-1, 871-1 (RC)** Strategic Planning for Technology Programs
- **871-2, 871-2 (RC)** Concept Development and Requirements Analysis
- **871-3, 871-3 (RC)** System Design, Engineering, and Integration
- **871-4, 871-4 (RC)** Test and Evaluation

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Business Size: Service-Disabled, Veteran-Owned Small Business (SDVOSB)

- For more information on ordering from Federal Supply Schedules click on the FSS Schedules button at <http://www.fss.gsa.gov>.
- Prices shown herein are Net (discount deducted)
- On-line access to contract ordering information, terms and conditions, up-to-date pricing, and the option to create an electronic delivery order are available through GSA Advantage!™, a menu-driven searchable database system. The INTERNET address for GSA Advantage!™ is <http://www.gsaadvantage.gov/>

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SPECIAL NOTICE TO AGENCIES:

Small Business Participation

SBA strongly supports the participation of small business concerns in the Federal Supply Schedules Program. To enhance Small Business Participation SBA policy allows agencies to include in their procurement base and goals, the dollar value of orders expected to be placed against the Federal Supply Schedules, and to report accomplishments against these goals.

For orders exceeding the micropurchase threshold, FAR 8.404 requires agencies to consider the catalogs/price lists of at least three schedule contractors or consider reasonably available information by using the GSA Advantage!™ on-line shopping service (www.fss.gsa.gov). The catalogs/pricelists, GSA Advantage!™ and the Federal Supply Service Home Page (www.fss.gsa.gov) contain information on a broad array of products and services offered by small business concerns.

This information should be used as a tool to assist ordering activities in meeting or exceeding established small business goals. It should also be used as a tool to assist in including small, small disadvantaged, and Service Disabled, Veteran Owned, Small Businesses among those considered when selecting pricelists for a best value determination.

For orders exceeding the micropurchase threshold, customers are to give preference to small business concerns when two or more items at the same delivered price will satisfy their requirement.

Service Contract Act

John H. Northrop & Associates acknowledges that the Service Contract Act (SCA) is applicable to this contract as it applies to the entire Professional Engineering Services Schedule and all services provided. While no specific SCA labor categories have been identified, this contract still maintains the provisions and protections for SCA eligible labor categories and the contractor will ensure that all employees that fall under the provisions of the SCA will be compensated in accordance with the applicable wage determination(s) for the location(s) in which work is performed. If and/or when the contractor adds SCA labor categories/employees to the contract through the modification process, the contractor must inform the Contracting Officer and establish a SCA matrix identifying the GSA labor category titles, the occupational code, SCA labor category titles and the applicable wage determination number. Failure to do so may result in cancellation of the contract.

JHNA Company Overview

John H. Northrop & Associates, Inc. (JHNA) is a technical consulting service providing unique, creative and innovative products and services to both the Federal government and private sector companies at the forefront of new technology development.

We specialize in providing technical consulting in the realms of military equipment, aerospace equipment, and military systems engineering. While we work in many technology areas, we

have extensive expertise in tactical operations, soldier systems, the use and integration of manned and unmanned ground or air systems. Our consultants understand current and future operational environments and are experienced in the DoD capability analysis, requirements analysis, requirements generation processes, systems engineering process, and DT&E and OT&E. This expertise allows us to develop concepts, conduct analysis, and create products to justify proposed military systems and platforms. JHNA helps translate warfighter needs into system requirements in order to foster understanding between engineers and users. These same skills are used to support integration efforts wherein technologies are fielded to soldiers, and we skillfully show the users not just the attributes of the new item, but more importantly, the operational application as related to mission accomplishment – as in the case of Army Recruiting. Far beyond simple net equipment training, our consultants teach the implications of a technology insertion effort. Whether serving as a member of a government team, or whether supporting an academic or industry customer to the government, *JHNA is your warfighter to engineer interface.*

JHNA is a privately owned company with its home office located in Burke, Virginia. JHNA currently has 25 full-time consultants. Our consultants have extensive experience developing products for approval and use by the user community. Most of the company consultants have served the military and others have extensive academic or commercial sector experience. We have significant ‘reach-back’ capability with numerous agreements in place for part-time support with several subject matter experts and former General Officers. All of our consultants have distinguished backgrounds. Currently, our consultants are providing services from many locations across the United States. Some work at the customer's business site while others support customers from small, local offices.

We have delivered wide ranging, product oriented support to our customers in areas including: Strategic Planning, Advanced Concept Development associated with Capability Analysis and Requirements Analysis, Systems Engineering Support, Test & Evaluation Support, Technology Transition and Marketing, Program and Project Management, and Technology Integration and Training.

JHNA has demonstrated these capabilities in both the public and private sector. The following is a sample of some of the organizations and businesses that we have worked with:

Public (Organizations and Major Programs):

- Office of the Deputy Assistant Secretary of Defense for System Engineering
- Tank Automotive Research, Development and Engineering Center (TARDEC)
- US Army Recruiting Command
- U. S. Army Aviation and Missile Research Development and Engineering Center (AMRDEC) including Aviation Advance Technology Development (AATD)
- US Military Academy Department of Engineering
- Natick Soldier Systems Center US Army Future Force Warrior Program
- US Army FCS Program

Private:

- Avion Incorporated
- Aurora Flight Sciences, Inc.
- General Dynamics (several centers including Land, Robotics and C4S)
- L-3 Communications (several centers including RCCS, Tel-East, Tel West)
- Lockheed Martin Missile and Fire Control Systems, LM Autonomous Systems
- Metal Storm, Inc.
- Qinetiq, North America
- SAIC (several profit centers)
- Others

JHNA Primary Services

1. Strategic Planning

JHNA offers technical consulting support for the purpose of marketing products. This support includes assessing the customer's product(s) and developing a strategic plan for development improvement. Product assessment includes identifying the customer's system's key operational capabilities and mapping those capabilities to service mission needs in order to establish the relevance of the product to the user. The strategic plan includes developing a marketing message, identifying the marketing adversaries, interested and enablers, and establishing the plan to deliver that message. JHNA either prepares or assists technical experts in the preparation of the PowerPoint briefings, read-aheads, and supporting white papers for use in the marketing effort. We have also led projects to develop audio-visual marketing aids, and we participate in marketing sessions with the user, as required by the customer.

JHNA also furnishes outstanding, tailored Program Support packages for program managers and project leaders, including, but not limited to, Integrated Product/Process Team facilitation, Proposal Support & Development, Red Team participation, technical writing for publication, and New Equipment Training. JHNA also has access to former senior military general officers who can provide gray-beard expertise and as-needed technical consulting. We pride ourselves on advising the customer, working side-by-side with the customer, and delivering quality products.

2. Advanced Capabilities Analysis and Requirements Analysis

JHNA has the following core capabilities in its Advanced Capabilities Analysis and Requirements Analysis business:

- * Capability Analysis including Operational Concepts, Operational Architectures (see System Engineering support, Sec. 3 below) and Tactical Behaviors

- * Requirements analysis (RA), including requirements decomposition, metrics development, requirements data base development and requirements traceability

JHNA Experience

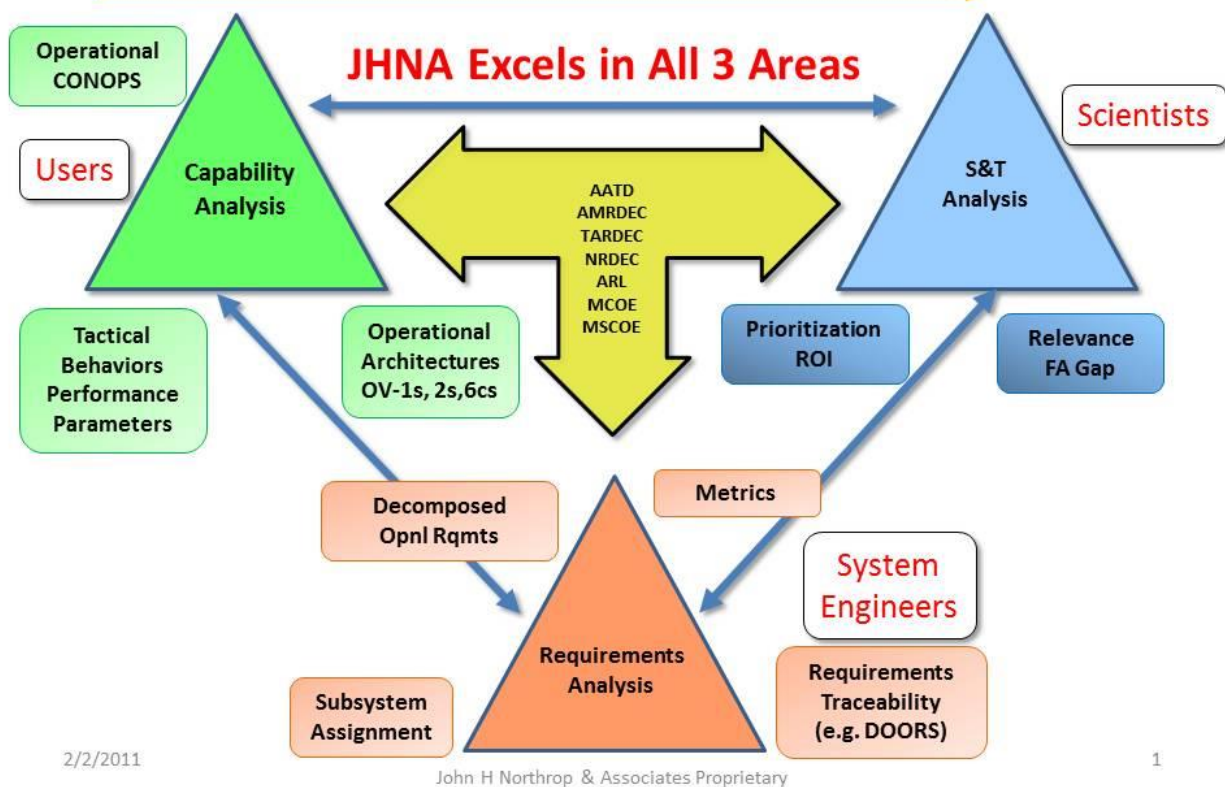


Figure 1. JHNA's Capability Analysis and Requirements Analysis Experience

In layman's terms, JHNA develops conceptual schematics to depict what a future system might possibly do in a future operating environment. This (often multiple) depiction in operational performance expectation and interoperability considerations is then used to determine fundamental operating (or tactical level) behaviors that the system should be able to perform. This includes "how well" and "with whom" considerations. These behaviors are then decomposed into specific system requirements that systems and design engineers use to construct the final system. This process is relevant to the acquisition of both new systems and the upgrade of existing systems. JHNA has conducted this capability for over 12 years and has multiple SMEs that are highly regarded in the industry.

Capability Analysis

JHNA assists its customers in gaining user endorsement and sponsorship of a technology by conducting relevant Capability Analysis. We develop awareness of the capability benefits a technology provides by mapping it to established user capability gaps, or helping users understand the need when they do not have a gap already established. We clarify the capability in terms of performance expectations to ensure the technology is a good solution for a user need. We identify the interoperability requirements of the technology and describe its tactical

behaviors within existing or future battlespace relationships. This capability based analysis provides both industry and DoD decision makers the information necessary to determine if a technology is worth the capital investment for further development and who should be the appropriate sponsor. These capability analyses also feed directly into requirements documents in the JCIDS process, operational and systems views in the DoDAF process, and into the systems engineering process.

Below is a representative PowerPoint slide suggesting an Armed Reconnaissance Vehicle's required tactical behaviors.

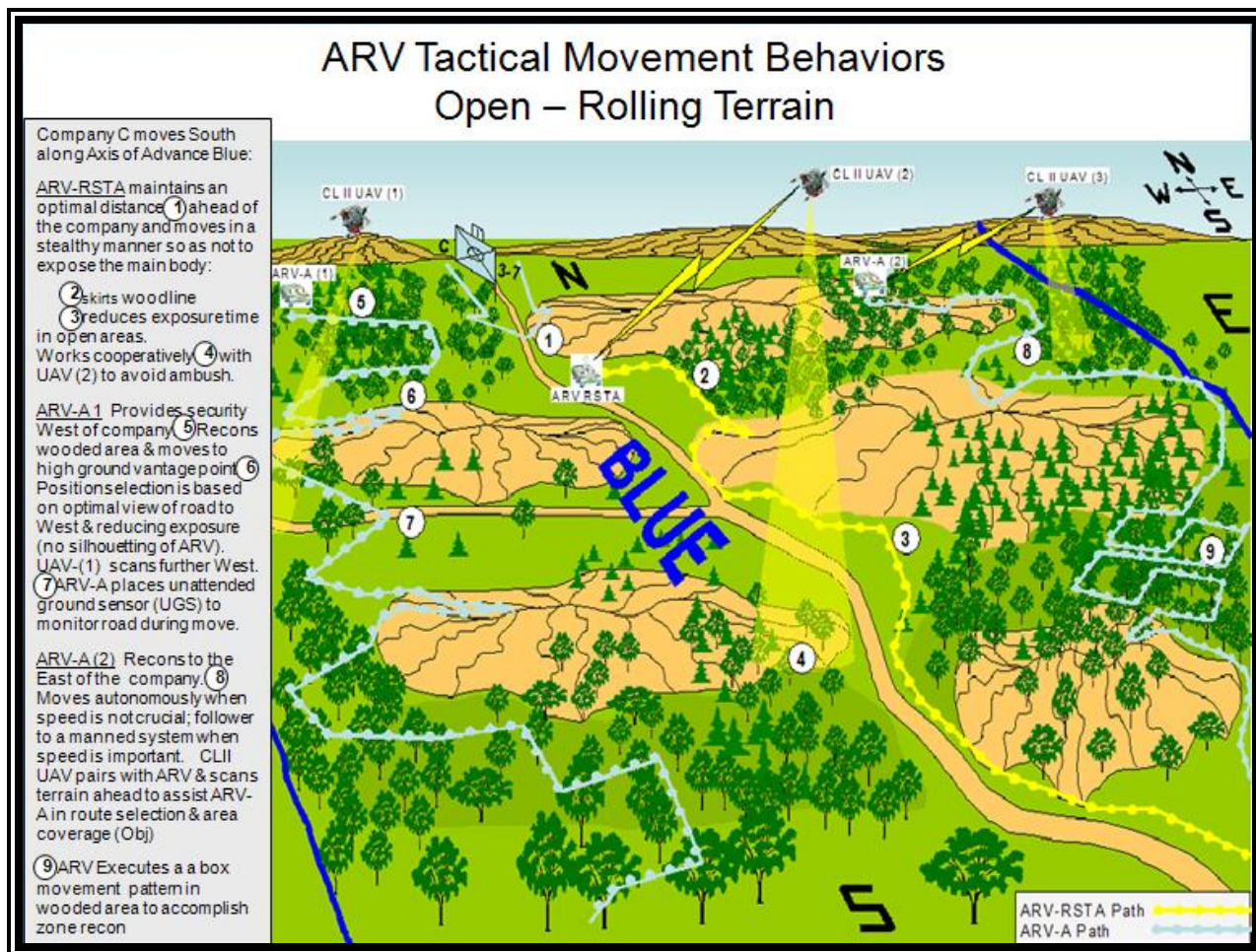


Figure 2. Sample CONOPS Product Demonstrating UGV Tactical Behaviors

Requirements Analysis

JHNA works hand in hand with system engineers or scientists from either the government, academia or industry communities. Requirements analysis is a logical continuation of the capabilities analysis effort. JHNA consultants provide key insights in terms of operational performance expectations in order to effect the translation into system and subsystem

assignment and traceability. We have worked numerous programs wherein JHNA played a key role in identifying performance metrics. Inherent in this process is capturing the performance arbitration and establishing a requirements traceability process. JHNA is familiar with requirements traceability and has used DOORS, or has created Excel-based compendiums for simpler systems.

Science & Technology Analysis

JHNA has worked a number of S&T efforts primarily from the perspective of assessing whether a technology is relevant to an existing operational concept or to a Service identified warfighting need. TRADOC (US Army) uses a system called “Warfighter Outcomes” to recommend industry’s priority of effort. JHNA has worked technology prioritization from the perspective of technology readiness level, cost, and relevance.

3. Systems Engineering Support

JHNA can provide multiple levels of systems engineering support including, but not limited to:

- * A concrete understanding of the DoDAF process and the ability to produce and incorporate Operational and System Views (OVs, SVs)
- * The development and clarification of various systems performance expectations
- * The ability to interface with the user community to ensure that the final system meets user needs

DoDAF Products and Support

JHNA also has extensive experience in developing Department of Defense Architecture Framework (DoDAF) operational products. DoD requires these architectures for justification and approval of new systems and any subsequent changes as the system undergoes normal product improvement. Our team's primary focus is on developing the operational architecture and supporting the development of the system's architecture. Our integrated approach of relating concepts and requirements to architecture development promotes decomposition of complex problems into understandable subsets. Our architecture products detail the activities, relationships, standards, systems, information exchanges, and centers of activity necessary for the development of an interoperable system of systems. Through the use of operational views (OVs), our products describe organizations and key entities (OV-4s), top-level operational views and key operational nodes (OV-1s), and identifying and prescribing the key needlines between entities (OV-2s). We are particularly adept at identifying key activity models (OV-5s) and event

trace descriptions (OV-6cs). Based on the OV-2, OV-5 or OV-6cs, we have used data entry tools such as Popkin or the CADIE (Capabilities-based Architecture Development and Integration Environment) to develop the information exchange requirements data base (OV-3s).

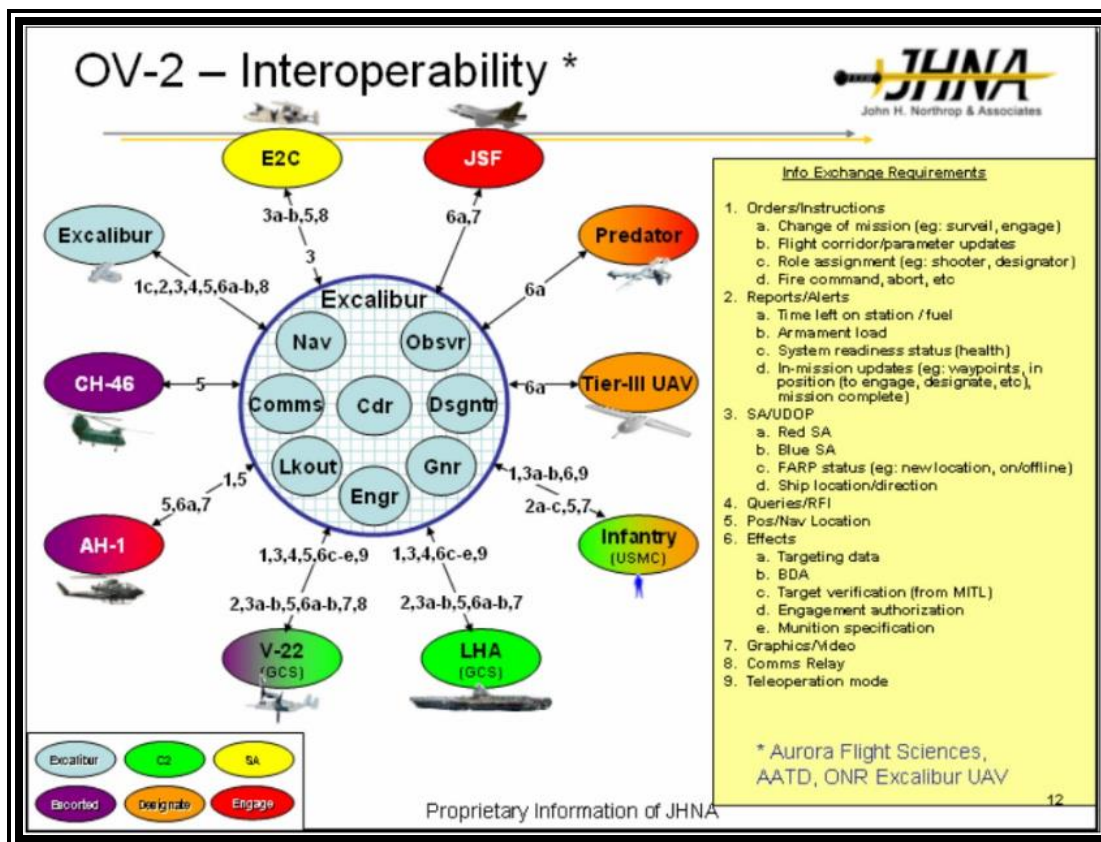


Figure 3. Sample OV- 2 for Excalibur UAS (an ONR-Aurora Flight Sciences-AATD effort)

4. Test & Evaluation Support

JHNA provides support to operational and developmental testing, experimentation and demonstrations for STOs, ATDs and JCTDs. We help design, coordinate, and conduct virtual and field experiments to explore, refine, and assess concepts, validate prototypes, and evaluate future capabilities. We shape experiments to identify the technical capabilities and limitations of the concepts and design options under consideration for development. Our efforts before, during, and after events help ensure that experiments provide benefit for either the user community or industry. Industry receives valuable marketing and exposure of the system and exposure of the developer to the user's environment. JHNA planning ensures experiments, evaluations, and demonstrations are valuable to decision makers by producing data that

provide actual user feedback on specific user requirements. These observations and data may also contribute to the development of tactics techniques and procedures. Event results can produce underpinning analysis for garnering follow-on support for funding and program decisions.

JHNA has experience with many of DoD's premier test facilities. JHNA has been a key participant in the development and coordination of several design evaluations for the Army's Future Force Warrior (FFW) Soldier equipment design. JHNA was the primary coordinator for the Lead Technology Integrator (LTI) Eagle Enterprise for the FFW ATD. We also created the operational scenarios, developed the demonstration plan, and coordinated administrative requirements and logistics for the UACO STO in 2007 at Soldier Battle Lab facilities at Fort Benning, GA.

5. Technology Transitioning & Marketing

Technologies that demonstrate military utility must have a transition plan to ensure up front support and eventual full-scale development of the technology. JHNA can assist with planning required to make this transition happen. We can help identify how the technology can integrate into current or future operational environments to fill a capability gap or urgent operational need. We can also determine potential procurement strategies and identify entry points in the formal acquisition process if necessary. We can help define strategies for the areas of contracting, supportability, interoperability, affordability, and requirements definition that are consistent with the intended entry point. We can also help define implementation timelines for each of the strategies. For example, those elements of the strategy that will have a direct impact on the design of the system must be addressed either in the initial design or in a subsequent design upgrade (e.g. P3I) that is consistent with the overall acquisition strategy. This transition planning is an overarching process of focusing science & technology developments on relevant user capability needs to establish early user advocacy. JHNA will help identify adversaries, interested parties, advocates and potential sponsors for the technology and assist with marketing to gain their endorsement and sponsorship. The goal is to get timely funding for the technology so that it maintains momentum after its successful demonstration and move it as rapidly as possible to fielding.

6. Program & Project Management

JHNA is able to provide a wide range of program and project management expertise. Through many of its projects JHNA has provided project planning and scheduling, project leadership and communications with stakeholders, as well as EVMS support. JHNA is also able to conduct project performance monitoring and measurement, project status reporting and documentation, and stakeholder briefings. JHNA consultants work hand in hand with their clients by participating in required meetings, and leading a wide range of program integration services. Lastly, JHNA provides program close-out services when required. This support may

entail after action reviews, lessons learned, or creation of training that can be integrated in the organization's training programs.

7. Technology Integration and Training

JHNA has the capability to assist organizations in the development of strategic plans to integrate technologies which improve unit/business efficiency and capability. In tandem, JHNA has the ability to implement these strategies by facilitating and participating in the work of the client's project team to ensure that beyond initial new equipment training, strategic goals are achieved. We have assisted in the development of major IT strategic plan and then helped implement and train the technologies as part of a client team throughout the US Army Recruiting Command.

JHNA Labor Categories & Pricing

The following are JHNA's labor categories for each awarded SIN, with fully burdened hourly rates that are valid for calendar year 2011:

Contract Year, 2011	
Labor Category	Hourly Rate
Subject Matter Expert (SME)	\$248.13
Executive Director	\$177.44
Senior Associate	\$159.26
Engineer	\$138.95
Associate	\$115.76
Junior Associate	\$93.71
Project Officer	\$65.00
Project Administrator	\$46.86

JHNA Description of Labor Categories

SUBJECT MATTER EXPERT	
GENERAL SUMMARY	Expert in single or multiple technical disciplines providing expert knowledge and insight into specific areas of science and technology. Guides the development and application of this knowledge to the project. Independently performs a variety of system design and integration tasks where subject matter expertise is required.
PRINCIPAL DUTIES & RESPONSIBILITIES	1. Provide hands-on subject matter expertise in one or more specific technical areas where consultant is regarded as an expert in the field.

	<ol style="list-style-type: none"> 2. Supervises and guides a broad team of technical staff/engineers. 3. Plans and performs required research, design evaluation, technical development, system integration planning and other tasks in specific technical areas. 4. Responsible for highly complex technical/engineering tasks. 5. Coordinates and guides the activities of technical staff assigned to specific tasks. 6. May perform other duties as required.
EDUCATION AND EXPERIENCE	Master's Degree or equivalent and 25 years of general experience with at least seven years in the area of expertise

EXECUTIVE DIRECTOR	
GENERAL SUMMARY	Oversees the clients' most significant projects and able to manage a program of work conception to implementation, provide expertise on a wide range of technical areas, and manage large teams of consultants or engineers.
PRINCIPAL DUTIES & RESPONSIBILITIES	<ol style="list-style-type: none"> 1. Supervises and guides a broad team of technical staff/engineers. 2. Plans and performs required research, design evaluation, technical development, system integration planning and other tasks in specific technical areas. 3. Responsible for highly complex technical/engineering tasks. 4. Coordinates and guides the activities of technical staff assigned to specific tasks. 5. May perform other duties as required.
EDUCATION AND EXPERIENCE	A Master's Degree or equivalent in a technical field. Over 22 years of general experience with at least five years in the area of expertise.

SENIOR ASSOCIATE	
GENERAL SUMMARY	Senior associate is a position of responsibility that is expected to supervise JHNA associates in the accomplishment of a major contractual deliverable.
PRINCIPAL DUTIES & RESPONSIBILITIES	<ol style="list-style-type: none"> 1. Significantly contributes to proposal development and business capture 2. Manages a multi-person project and prepare and review product deliverables 3. Ability to perform detailed analysis and independent thought 4. Has excelled at associate attributes

	5. Responsible for highly complex technical/engineering tasks.
EDUCATION AND EXPERIENCE	An MS/MA or equivalent, preferably in a technical field requiring analytical capabilities. Over 18 years of general experience with at least five years in the area of expertise.

ENGINEER	
GENERAL SUMMARY	Supports engineering efforts that provide engineering, technical, and managerial direction for problem definition, analysis, requirement development, and implementation for complex systems in the engineering discipline required to meet technical requirements. Participates in efforts that develop recommendations and advice on system development, improvements, optimization, or support efforts.
PRINCIPAL DUTIES & RESPONSIBILITIES	<ol style="list-style-type: none"> 1. Supports analysis and implementation of hardware and software systems requirements or researches, summarizes and evaluates engineering data and prepares engineering and test reports for customer review; 2. Interacts with customer representatives concerning the status of assigned tasks; 3. Administers and coordinates tasks for assigned project work activities; 4. Arranges periodic management meetings for staff and customer representatives; 5. Compiles materials for customer briefings and proposal presentations; 6. May evaluate proposal pricing, prepare funding packages and participate in marketing activities; 7. May assign tasks to other professional and technical staff as part of a work team; 8. May estimate manpower needs and scheduling requirements for assigned activities.
EDUCATION AND EXPERIENCE	Bachelor's Degree with 12 years general experience with approximately five years in an engineering discipline such as systems, industrial, civil, aviation, aerospace, electrical, mechanical, nuclear, chemical, information, computer, software, marine, environmental, telecommunications, information security, network, or other engineering disciplines.

ASSOCIATE	
GENERAL	Associate is a position of responsibility that is expected to

SUMMARY	contribute significant independent thought. JHNA associates contribute in the accomplishment of a major contractual deliverable.
PRINCIPAL DUTIES & RESPONSIBILITIES	<ol style="list-style-type: none"> 1. Provides advice and counsel to clients, and oversight and accountability for delivery success and client satisfaction. 2. Provides market development and delivery leadership for the organization and the client. 3. Proficiency in developing channel and client relationships. 4. Strong oral and written communication skills 5. Strong presentation skills 6. Has an advanced technical writing capability. 7. Contributes to business capture and proposal development for the organization and the client. 8. Excellent interpersonal and communication skills, problem solving and analytical ability, strong judgment and project management skills.
EDUCATION AND EXPERIENCE	Bachelor's Degree preferably in a technical field with a minimum of ten (10) years of progressive consulting experience.

JUNIOR ASSOCIATE	
GENERAL SUMMARY	Junior Associate is a position that is expected to participate and contribute to client task delivery and expected to work independently or within a small team. A junior associate may be involved in project delivery, project management, or other administrative tasks as needed.
PRINCIPAL DUTIES & RESPONSIBILITIES	<ol style="list-style-type: none"> 1. Demonstrated ability to manage projects and programs effectively. Strategic Thinker. 2. An ability to problem solve, and to think creatively and resourcefully to resolve project (and data) issues and problems. 3. Demonstrated attention to detail, well organized, and strong interpersonal skills to establish and maintain constructive and collaborative relationships with the organization and the client. 4. Possesses Exceptional Microsoft office skills, including PowerPoint, Word, and Excel. 5. Has strong technical writing capability 6. Can respond to specific guidance and create visual presentations and written documents or spread sheets of Microsoft Office Suite of programs 7. Plans, schedules, and applies appropriate techniques to communicate design concepts to the Owner/Client and project team. 8. Understands the project(s) scope, and plans and develops

	<p>concepts and approaches appropriate to the construction budget and the disciplines in carrying out the project work.</p> <p>9. Provide thought leadership and process improvement for the project development lifecycle process.</p> <p>10. Works closely with the Executive Director, Senior Associates, and Associates for the organization and for the Client Team Leader and Project Manager in determining and delivering the design solution(s) for the project.</p>
EDUCATION AND EXPERIENCE	Bachelor's Degree, preferably with a degree in math, science and engineering or information management with a minimum of seven (7) years experience.

PROJECT OFFICER	
GENERAL SUMMARY	A Project Officer supports projects and client tasks by capturing metrics and other project attributes to facilitate management reporting. This may include monitoring work and deliverables provided by all vendors and consultants. In addition, the Project Officer may provide insight to the client/management on issue surrounding project management and project health.
PRINCIPAL DUTIES & RESPONSIBILITIES	<ol style="list-style-type: none"> 1. Provides leadership in improving the process for subsequent planning cycles. 2. Familiarity with data and process requirements involved with research, knowledge of analytic tools and approaches. 3. Ability to summarize and report key features of project activities and findings. 4. Demonstrated ability to manage projects and programs effectively. Strategic Thinker. 5. An ability to problem solve, and to think creatively and resourcefully to resolve project (and data) issues and problems. 6. Demonstrated attention to detail, well organized, and strong interpersonal skills to establish and maintain constructive and collaborative relationships with the organization and the client. 7. Proficient in Microsoft Office products. 8. Assists with the scoping and implementation of client's problem / issue tracking system. 9. Supports the PMO with document management, archiving, versions and document retrieval. 10. Carry out special projects as determined by the Client/Team Project Member.
EDUCATION AND EXPERIENCE	High School Graduate or higher with minimum of five (5) relevant years of work experience, preferably in Computer Science, Technology Management, Information Systems, Systems

	Engineering, or similar.
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PROJECT ADMINISTRATOR	
GENERAL SUMMARY	A Project Administrator supports client projects and deliverables by conducting a wide array of administrative tasks. This may include, but is not limited to development of communication materials, project tracking materials or assistance in reporting.
PRINCIPAL DUTIES & RESPONSIBILITIES	<ol style="list-style-type: none"> 1. Prepare security visit letters and monitor employee/contractor security clearance status 2. Manage program and travel budgets 3. Provide limited support to client projects 4. Conduct internet searches and research for information 5. Manage and monitor JHNA project related budgets 6. Attend project meetings and prepare meeting notes 7. Conduct technical writing and correspondence on behalf of project team 8. In-process and out-process new/exiting team members
EDUCATION AND EXPERIENCE	High School Graduate or higher with minimum of three (3) relevant years of work experience, preferably in the defense, engineering, or other technical industry.

Substitution/Equivalency

BS/BA degree plus four years of experience can be substituted for an MS/MA degree.